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| APPLICATION NO.          | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------|-------------|----------------------|---------------------|------------------|
| 10/619,688               | 07/15/2003  | Felix A. Streiff     | CTSZ.106510         | 8456             |
| 5251                     | 7590        | 03/28/2005           | EXAMINER            |                  |
| SHOOK, HARDY & BACON LLP |             |                      | COOLEY, CHARLES E   |                  |
| 2555 GRAND BLVD          |             |                      | ART UNIT            | PAPER NUMBER     |
| KANSAS CITY,, MO 64108   |             |                      | 1723                |                  |

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/619,688

Applicant(s)

STREIFF ET AL.

Examiner

Charles E. Cooley

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17-25 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **NON-FINAL OFFICE ACTION**

1. This application has been assigned to Technology Center 1700, Art Unit 1723 and the following will apply for this application:

Please direct all written correspondence with the correct application serial number for this application to Art Unit 1723.

Telephone inquiries regarding this application should be directed to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 or to the Examiner at (571) 272-1139. All official facsimiles should be transmitted to (703) 872-9306.

2. As the PTO continues to move towards a fully electronic environment, the office will phase-in its E-Patent Reference program. This program: (1) provides downloading capability of the U.S. patents and U.S. patent application publications cited in Office actions via the E-Patent Reference feature of the Office's PAIR system; and (2) ceases mailing paper copies of U.S. patents and U.S. patent application publications with office actions except for citations made during the international stage of an international application under PCT.

Effective June 2004, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions from this Technology Center. Paper copies of foreign patents and non-patent literature will continue to be included with office actions.

The U.S. patents and patent application publications cited in office actions are available for download via the Office's PAIR system. As an alternate source, all U.S.

patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources.

Inquiries about the use of the Office's PAIR system should be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

### ***Priority***

3. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. § 119(e).

### ***Information Disclosure Statement***

4. Note the attached PTO-1449 form(s) submitted with the Information Disclosure Statements filed 7 NOV 2003 and 21 JAN 2004.

### ***Drawings***

5. Applicant should verify that (1) all reference characters in the drawings are described in the detailed description portion of the specification and (2) all reference characters mentioned in the specification are included in the appropriate drawing Figure(s) as required by 37 CFR 1.84(p)(5). If required, drawing changes should be submitted as follows:

## **INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

### **Replacement Drawing Sheets**

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment. Any replacement drawing sheet must be identified in the top margin as "Replacement Sheet" (37 CFR 1.121(d)) and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

### **Annotated Drawing Sheets**

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheets must be clearly labeled as "Annotated Marked-up Drawings" and accompany the replacement sheets.

### **Timing of Corrections**

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

***Specification***

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
7. The abstract is acceptable.
8. The title is acceptable.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 1-14 and 17-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Horner (US 4,093,188).**

The patent to Horner (US 4,093,188) discloses a static mixer 20 and method of constructing said static mixer comprising providing a first grid 32 comprising one or more crossing elements 38 and one or more slots adjacent to each crossing element 38 (Fig. 2 and col. 4, lines 60-63) and providing a second grid 34 comprising one or more crossing elements 38' and one or more slots adjacent to each crossing element 38' (Fig. 2 and col. 4, lines 60-63) wherein said crossing elements 38 of said first grid 32 are arranged at intersecting angles to said crossing elements of said second grid (Fig. 2 and col. 4, lines 19-23); and positioning at least one elongated connector 36 positioned

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between and secured to said crossing elements 38 of said first grid and said crossing elements 38' of said second grid; said grids 32, 34 are arranged such that each crossing element of one grid intersects a slot in the other grid (Fig. 2); said crossing elements 38 of said first grid 32 are in a generally parallel relationship relative to one another (col. 3, lines 60-64); said crossing elements 38 of said first grid 32 lie within a common plane (Figs. 2 and 4); said crossing elements 38' of said second grid 34 are in generally parallel relationship relative to one another (col. 3, line 67 through col. 4, line 3); said crossing elements 38 of said second grid lie 34 within a common plane (Figs. 2 and 4); said crossing elements are one of corrugated plates and tubes (col. 5, lines 37-48); the static mixer 20 comprises more than two grids (e.g., the series of crossing elements 40 can be considered another grid and the series of crossing elements 40' can be considered yet another grid or see Fig. 10 and col. 5, lines 25-36 which explicitly teaches more than two grids); wherein each grid of the multiple grids comprises crossing elements such as 80, 82, 84 in Fig. 10 or the aforementioned crossing elements 40 and 40'; said crossing elements of each grid are arranged at intersecting angles to one another (such as 80, 82, 84 in Fig. 10 or the aforementioned crossing elements 40 and 40'); said connector 36 is positioned between said crossing elements of each grid as seen in Fig. 2; said crossing elements are one of metal, polymeric, ceramic construction or combinations thereof (col. 6, lines 29-41); said connector 36 extends continuously along the entire cross-sectional length of said static mixer (Fig. 1); said elongated connector 36 is positioned so that it intersects with said crossing elements along at least some of their points of intersection (Figs. 2 and 4); said crossing

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elements being secured to said connector by one of welding, brazing, gluing and combinations thereof (col. 6, lines 29-41); the static mixer including a generally ring-shaped fluid flow conduit 22 having a central axis, concentric inner and outer, radially spaced, circumferentially extending surfaces (Fig. 1); said inner surface defining a fluid flow path which extends along said axis (Fig. 1).

**11. Claims 1-6, 8-11, 13-14, and 17-25 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1067352 A1.**

EP 1067352 A1 discloses a static mixer in Fig. 1 and method of constructing said static mixer comprising providing a first grid 8, 9 comprising one or more crossing elements and one or more slots adjacent to each crossing element and providing a second grid 7 comprising one or more crossing elements and one or more slots adjacent to each crossing element (Fig. 1) wherein said crossing elements of said first grid 8, 9 are arranged at intersecting angles to said crossing elements of said second grid 7 as seen in Fig. 1; and positioning at least one elongated connector 5 or 6 positioned between and secured to said crossing elements of said first grid and said crossing elements of said second grid; said grids are arranged such that each crossing element of one grid intersects a slot in the other grid (Fig. 1); said crossing elements of said first grid 8, 9 are in a generally parallel relationship relative to one another; said crossing elements of said first grid 8, 9 lie within a common plane (Fig. 1); said crossing elements of said second grid 7 are in generally parallel relationship relative to one another (Fig. 1); said crossing elements of said second grid 7 lie within a common plane



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(Fig. 1); the static mixer comprises more than two grids as seen in Fig. 1; wherein each grid of the multiple grids comprises crossing elements as seen in Fig. 1; said crossing elements of each grid are arranged at intersecting angles to one another as seen in Fig. 1; said connector 5 or 6 is positioned between said crossing elements of each grid as seen in Fig. 1; said connector 5 or 6 extends continuously along the entire cross-sectional length of said static mixer (Fig. 1); said crossing elements being secured to said connector by one of welding, brazing, gluing and combinations thereof (see claim 6); said elongated connector 5 or 6 is positioned so that it intersects with said crossing elements along at least some of their points of intersection (Fig. 1); the static mixer including a generally ring-shaped fluid flow conduit (i.e., the pipe disclosed at paragraph [0005] of the translation) and inherently having a central axis and concentric inner and outer, radially spaced, circumferentially extending surfaces; said inner surface defining a fluid flow path which extends along said axis (paragraphs [0001] and [0002]).

**12. Claims 1-6, 8-11, 13-14, and 17-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Doom (US 4,072,296).**

The patent to Doom (US 4,072,296) discloses a static mixer 2 and method of constructing said static mixer comprising providing a first grid of elements 22 comprising one or more crossing elements 22 and one or more slots adjacent to each crossing element (Figs. 1 or 3) and providing a second grid of elements 20 comprising one or more crossing elements 20 and one or more slots adjacent to each crossing element (Figs. 1 or 3) wherein said crossing elements 22 of said first grid are arranged at

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intersecting angles to said crossing elements 20 of said second grid (Figs. 1 or 3); and positioning at least one elongated connector 8 positioned between and secured to said crossing elements 22 of said first grid and said crossing elements 20 of said second grid; said grids are arranged such that each crossing element of one grid intersects a slot in the other grid (Figs. 1 or 3); said crossing elements 22 of said first grid are in a generally parallel relationship relative to one another (Figs. 1 or 3); said crossing elements 22 of said first grid lie within a common plane (Figs. 1 or 3); said crossing elements 20 of said second grid are in generally parallel relationship relative to one another (Figs. 1 or 3); said crossing elements 20 of said second grid lie within a common plane (Figs. 1 or 3); the static mixer 2 comprises more than two grids (10, 12, 14, 16, etc.); wherein each grid of the multiple grids comprises crossing elements such as 20, 22, 30, 32; said crossing elements of each grid are arranged at intersecting angles to one another (Figs. 1 or 3); said connector 8 is positioned between said crossing elements of each grid as seen in Figs 1 or 3); said connector 8 extends continuously along the entire cross-sectional length of said static mixer (Figs. 1 or 3); said elongated connector 8 is positioned so that it intersects with said crossing elements along at least some of their points of intersection (Figs. 1 or 3); the static mixer including a generally ring-shaped fluid flow conduit 4 having a central axis, concentric inner and outer, radially spaced, circumferentially extending surfaces (Figs. 1-4); said inner surface defining a fluid flow path which extends along said axis (Figs. 1-4).

Although welding as means of securing elements together is a well-known concept in the art as expressed in the other rejections, with respect to claim 17, the

product-by-process limitation (i.e., the manner in which the crossing elements are secured to the connector) does not impart patentability to the claims per MPEP 2113 since there is no apparent structural difference between the crossing elements/connector of Doom and the product set forth by claim 17. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1067352 A1 or Doom (US 4,072,296) in view of Horner (US 4,093,188).**

EP 1067352 A1 or Doom (US 4,072,296) do not disclose the recited material of the crossing elements. As noted above, the patent to Horner discloses a static mixer with crossing elements that may be formed of metal or polymeric materials (col. 6, lines 29-41). It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have formed the crossing elements in either EP 1067352 A1 or Doom (US 4,072,296) from the one or more of the recited materials of instant claim 12 as taught by Horner for the purpose of manufacturing the static mixer as a function of the size and complexity of the mixer (col. 6, lines 29-31). Furthermore, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416; *Sinclair & Carroll Co., Inc. v. Interchemical Corp.*, 65 USPQ 297 (1945).

Furthermore, in view of the fact that the use of the materials recited in claim 12 vis-à-vis any other common construction material solves no stated problem insofar as the record is concerned and the conclusion of obviousness can be made from the

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common knowledge and common sense of one of ordinary skill in the art (*In re Bozek*, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969)), it would have been obvious to one of ordinary skill in the art to have formed any of the components of the prior art static mixers from well-known construction materials such as those recited in instant claim 12. *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

It is observed that artisans must be presumed to know something about the art apart from what the references disclose (see *In re Jacoby*, 309 F.2d 513, 135 USPQ 317 (CCPA 1962)). Moreover, skill is presumed on the part of those practicing in the art. See *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985). Therefore, it is concluded that the selection of a well-known material in the art such as metal, polymeric material, or ceramic material would have been obvious to one of ordinary skill in this art, if for no other reason than to achieve the advantage of using a more modern material or a lower cost or more easily fabricated material.

### ***Allowable Subject Matter***

16. Claims 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or fairly suggest the connector having crossing grooves positioned along the lines of contact of the crossing elements with the

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connector to provide a larger bonding surface and mechanical fitting for holding the crossing elements together.

***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows static mixers with crossing elements.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Charles", followed by a long, wavy horizontal line.

Charles E. Cooley  
Primary Examiner  
Art Unit 1723

19 March 2005